

SERVICE
MANUAL **PM-45**

marantz

model PM-45

Monitoring Amplifier

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.

Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified. If you order by mail, fulfil MARANTZ order forms.

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA
HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

AUSTRALIA
MARANTZ AUSTRALIA
PTY., Ltd.
19 Chard Road
Brookvale, NSW 2100
Australia
Telex: 24121

BELGIUM
SVD DIVISION MARANTZ
Industrielaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK
MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

EIRE
MARANTZ IRELAND Ltd.
Newstead
Glonkeagh
Dublin 4
Telex: 25200

FINLAND
MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY
MARANTZ GERMANY GmbH
Max-Planck-Strasse 22
6072 Dreieich 1
Germany
Telex: 529821

THE NETHERLANDS
MARANTZ
De Limiet 3
4131 NR Vianen
The Netherlands
Telex: 47679

NORWAY
MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
Oslo 6
Norway
Telex: 72640

GREAT BRITAIN
MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 0LW
Great Britain
Telex: 935196

GREECE
ADAMCO S.A.
P.O.Box 21025
Hippocrates Street 188
Athens 11410
Greece
Telex: 216.795

ITALY
MARANTZ ITALIANA S.p.A.
Via Monte Napoleone 10
20121 Milano
Italia

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 201530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Rainer House
Ove Street, 10
Doornfontein
Johannesburg
Telex: 483.456

SPAIN
PHONO S.A.
Ignacio Iglesias 10
Badalona (Barcelona)
Spain
Telex: 59355

SWEDEN
MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

SWITZERLAND
DYNAVON ELECTRONICS
Route de Villars 105
1701 Fribourg
Switzerland
Telex: 942377

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

U.S.A.
MARANTZ COMPANY, Inc.
National Service Department
P.O.Box 577
Chatsworth, CA 91311
U.S.A.

TECHNICAL ASSISTANCE

Should you require any other technical support, do not hesitate to contact the Technical Department of MARANTZ EUROPE & Co.

Avenue Louise 326 - Bte. 32
B-1050 Brussels

Belgium

Telephone: (02) 6407830 (10 l)

Telex: 26602

Fax.: (02) 649.29.20

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

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How to use this service manual

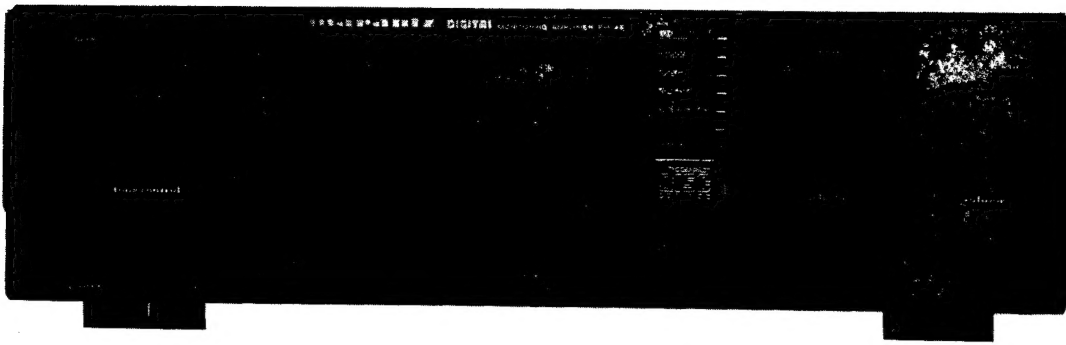
- The "Common parts" which Marantz Japan, Inc. has established are eliminated from this service manual.
- These "Common parts" are applied to all models in the service manuals arranged and issued by MJI.
- To indicate clearly the common parts in the schematic diagram, a line is drawn above or under the Ref. Desig. No. of applicable parts.
- "Common parts" can be supplied from the Marantz service center as ever.
In case of ordering, please establish the parts number of 10 figures following the procedure mentioned in this service manual "How to establish the parts number for common parts".

(NOTE)

When you order parts to the Marantz parts center, please take notice of the following points.

- 1) Please correctly write the parts number of 10 figures following the rule.
- 2) Since ordering parts by the Ref. Desig. No. or ratings indicated in the schematic diagram does not satisfy the above conditions, the Marantz parts supply system does not work properly.
As this case is apt to cause a trouble, please pay attention to it.

MODEL PM-45 MONITORING AMPLIFIER



INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model PM-45 Monitoring Amplifier.

Servicing information and voltage data included in this manual are intended for use by knowledgeable and experienced personnel only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of circuitry operation.

The parts list furnishes complete ordering information. Most replacement parts should be ordered from the Marantz Company. However, a simple description is included for parts which can be obtained locally.

1. Tone Volumemounted on P.W. Board PE01
2. Tone Defeat Switch ...mounted on P.W. Board PE51
3. Balance Volumemounted on P.W. Board PG51
4. Tape Monitormounted on P.W. Board PJ01
5. Fuse/AC Outletmounted on P.W. Board PP01
6. Volume/Push Switch ..mounted on P.W. Board PS01
7. Phono,
Input Selectormounted on P.W. Board PV01
8. Speaker Protector
Relaymounted on P.W. Board PW01
9. Speaker Switch/
Headphonemounted on P.W. Board PW51
10. Input Selector
Displaymounted on P.W. Board PY01
11. Main Ampmounted on P.W. Board P701
12. Power Supplymounted on P.W. Board P861
13. Power Switchmounted on P.W. Board P901

1. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of Model PM-45 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

2. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM-45 Monitoring Amplifier.

Item	Use
Distortion Analyzer	Distortion measurements
Audio Oscillator	Sinewave and squarewave signal source
AC VTVM	Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting and ASO alignment
Circuit Tester	Trouble shooting
DC VTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to amplifier
Line Voltmeter	Monitors potential of primary power to amplifier
Variable Autotransformer (0~140V AC, 10A)	Adjust level of primery power to amplifier
Shorting Plug	Shorts amplifier input to eliminate noise pickup

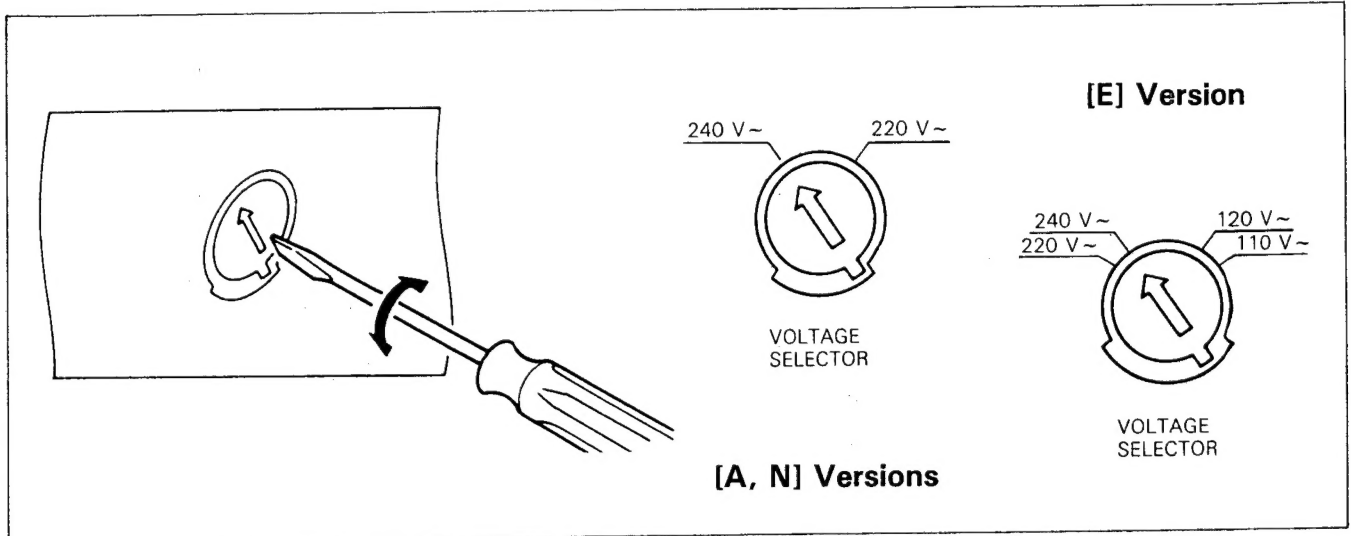
3. VOLTAGE CONVERSION

• EUROPEAN MODEL ONLY

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC
OUTLET BEFORE CONVERTING VOLTAGE.

Voltage Conversion Chart



Note on safety: Symbol \triangle Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol \triangle . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

4. ADJUSTMENT PROCEDURE

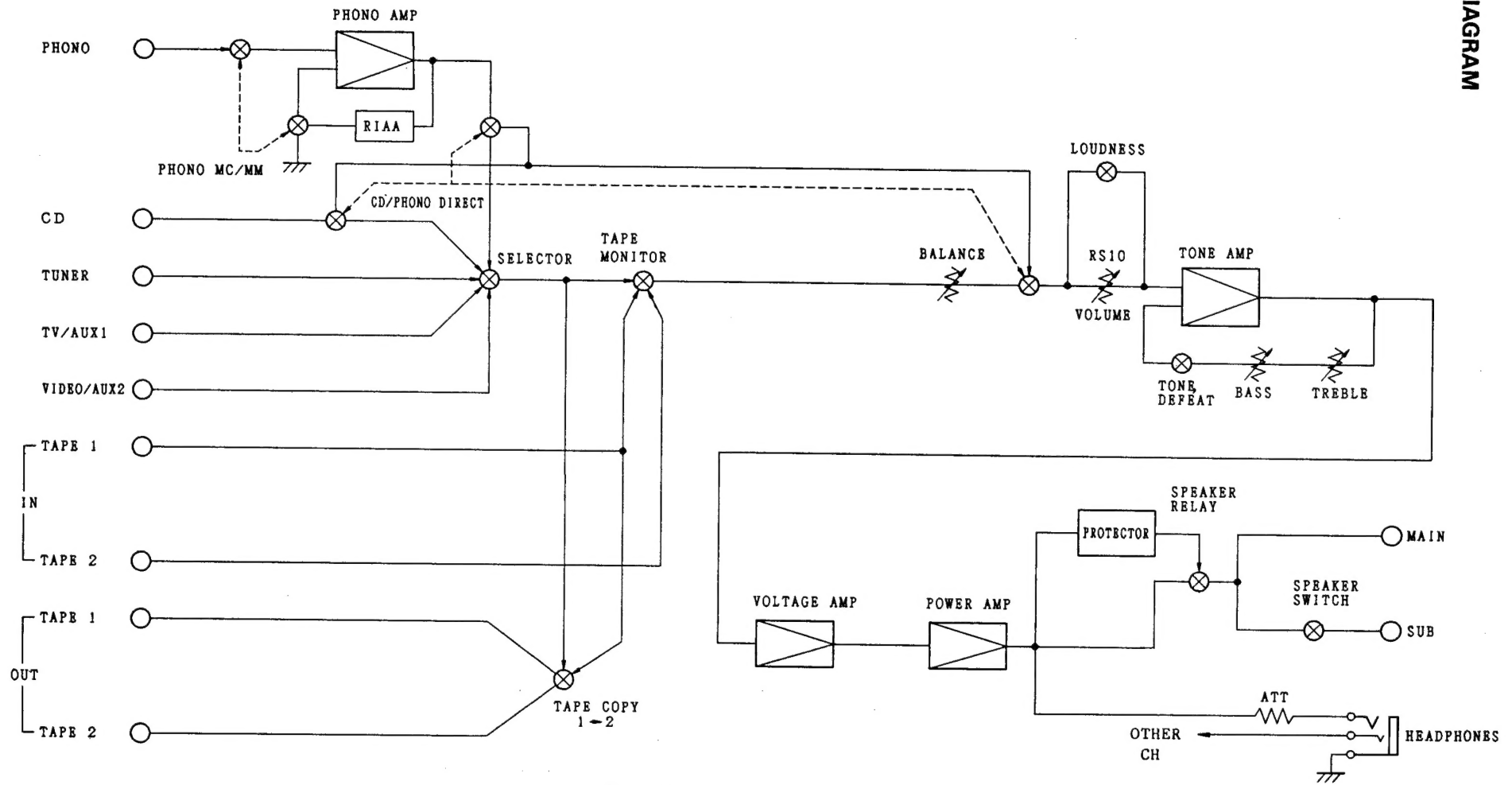
Idling Adjustment

1. Connect DC digital voltage to test point R737 (L-CH) and R738 (R-CH) terminals.
2. Turn POWER SWITCH to ON, and adjust R719 (L-CH) and R720 (R-CH) to 3mV 30 sec. later, and to 6mV 1 min. later.

Note:

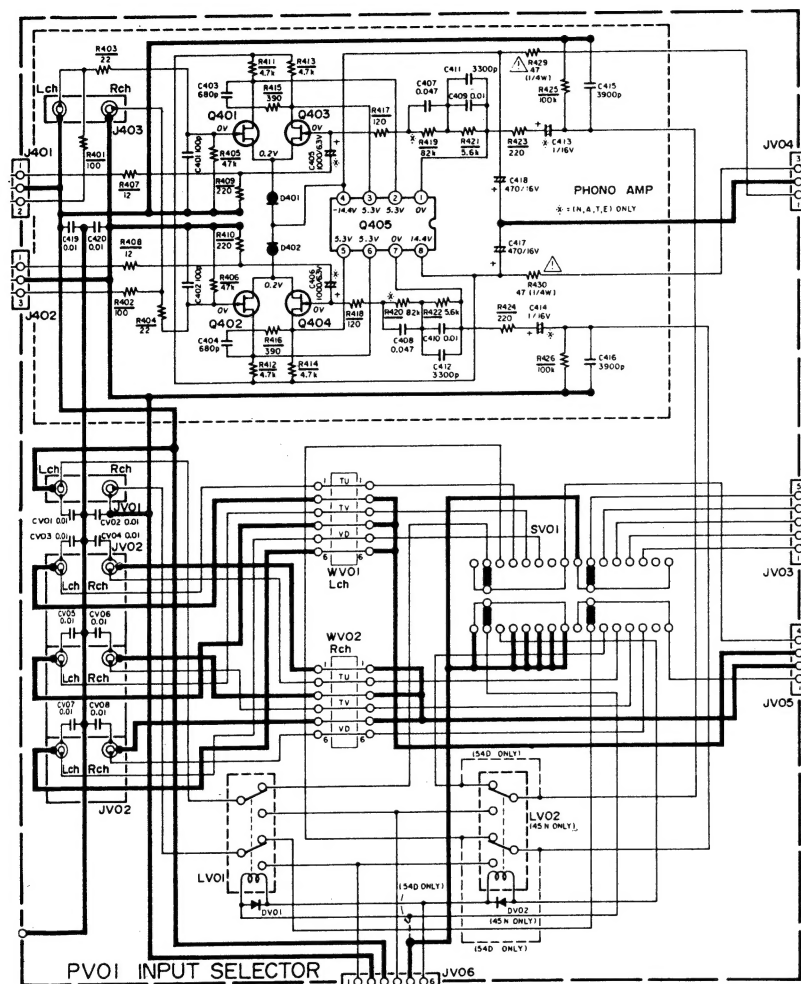
When adjusting, have output with no load, input to open, and volume on minimum.

5. BLOCK DIAGRAM

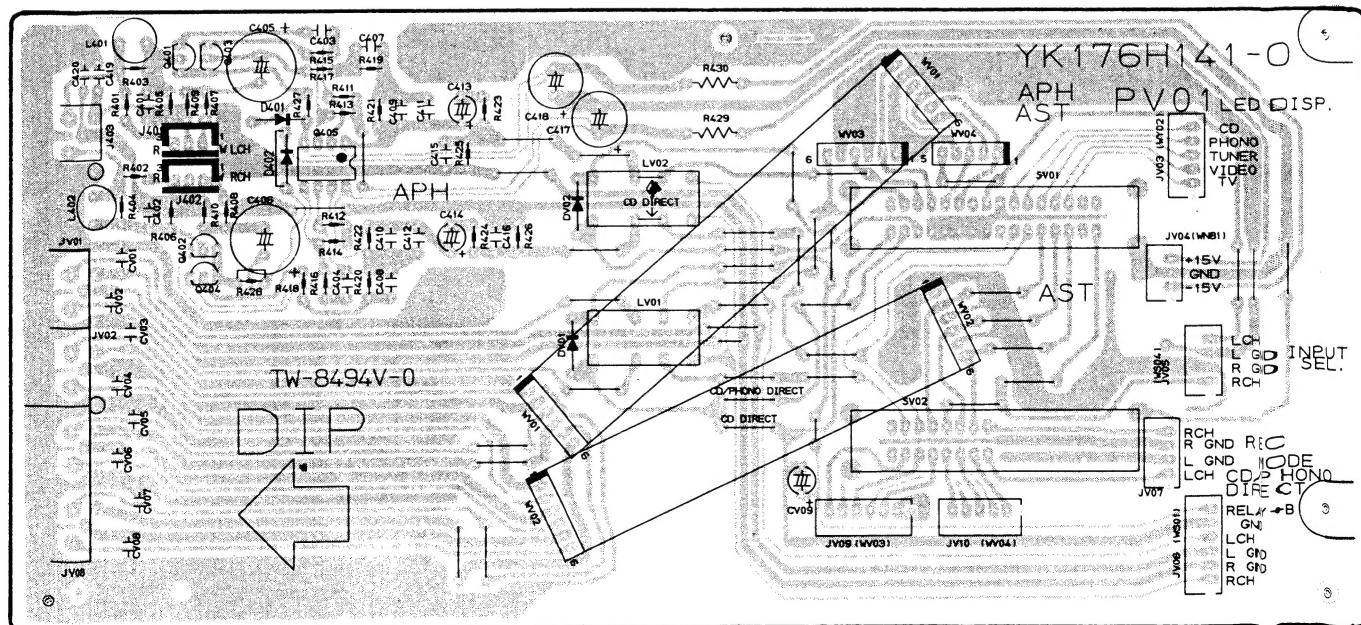
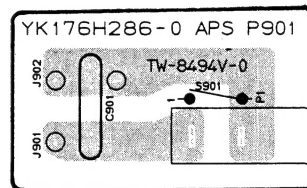
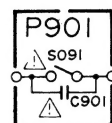


6. SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

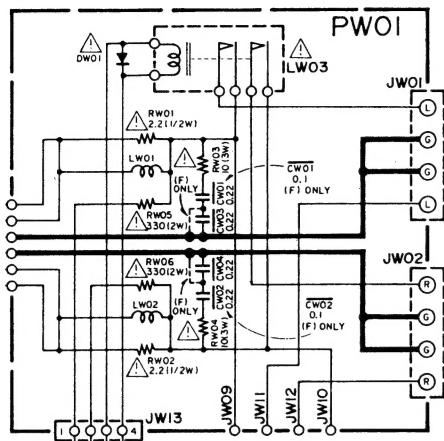
Phono, Input Selector Assembly (PV01) Schematic Diagram and Component Locations



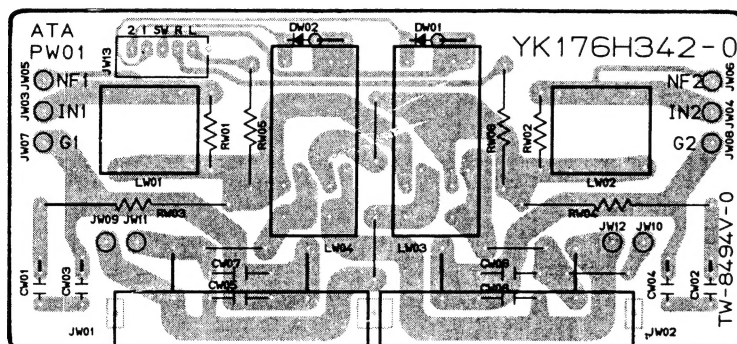
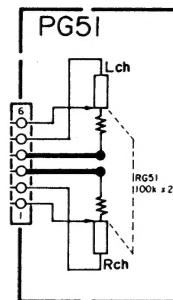
Power Switch Assembly (P901) Schematic Diagram and Component Locations



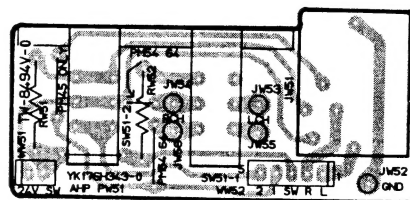
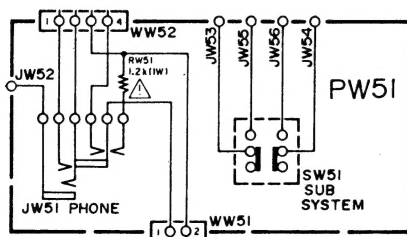
Speaker Protector Relay Assembly (PW01) Schematic Diagram and Component Locations



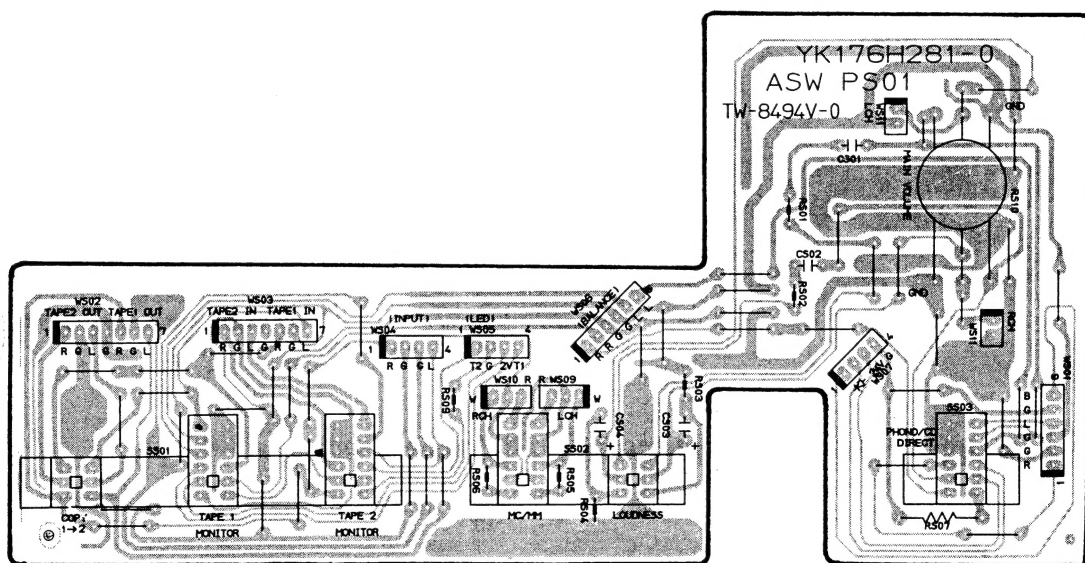
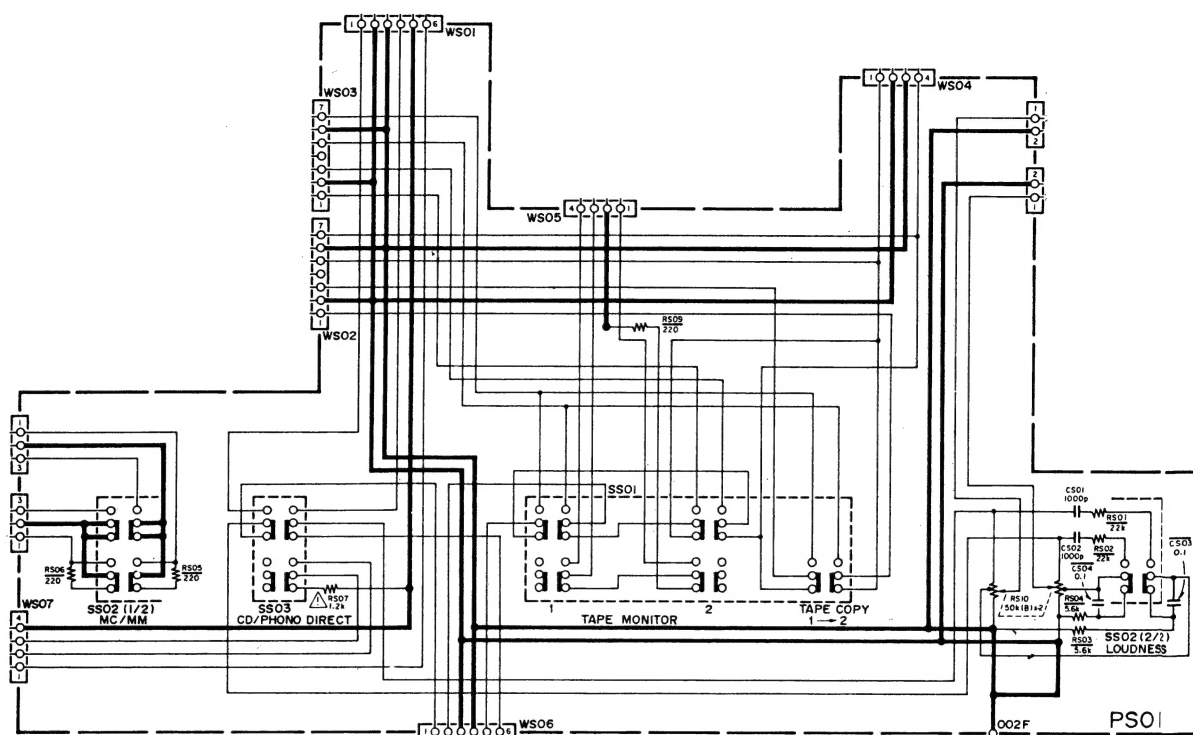
Balance Volume Assembly (PG51) Schematic Diagram and Component Locations



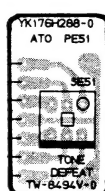
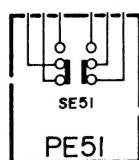
Speaker Switch/Headphone Assembly (PW51) Schematic Diagram and Component Locations



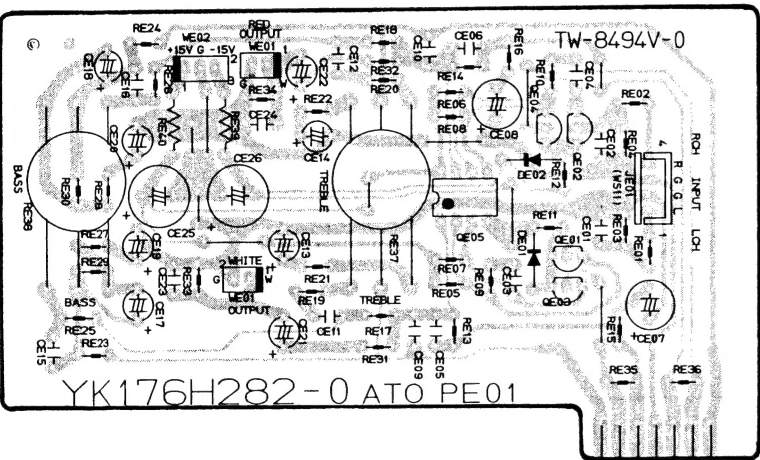
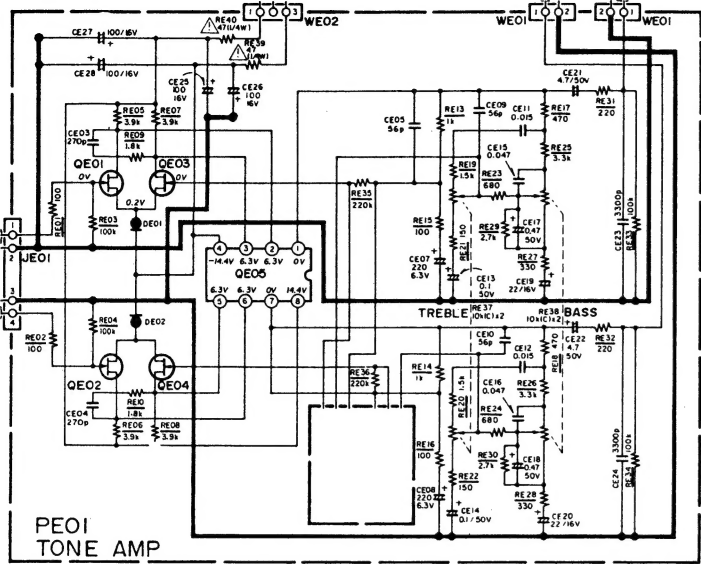
Volume/Push Switch Assembly (PS01) Schematic Diagram and Component Locations



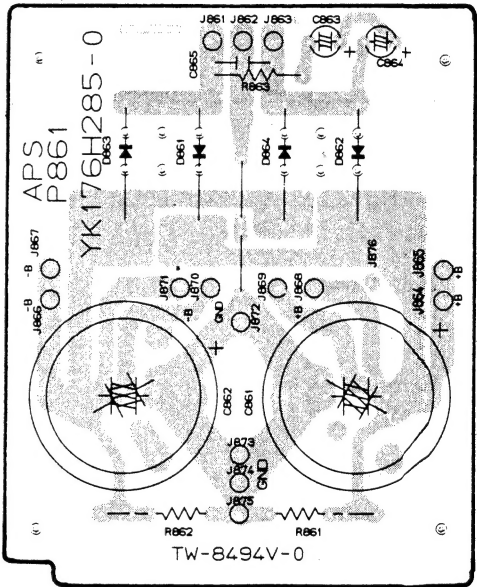
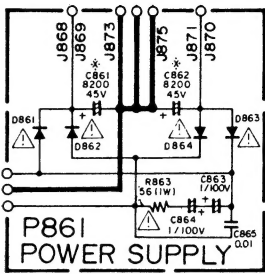
Tone Defeat Switch Assembly (PE51) Schematic Diagram and Component Locations



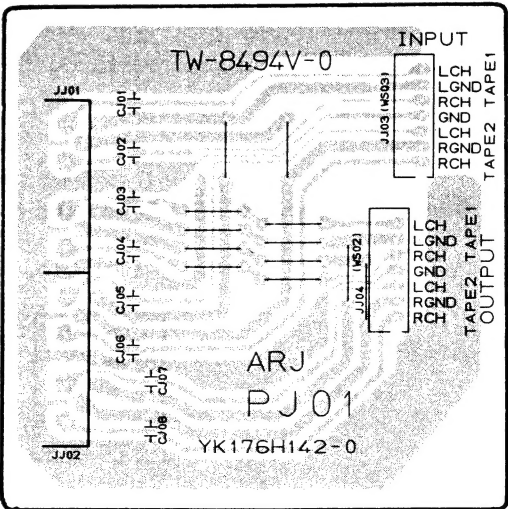
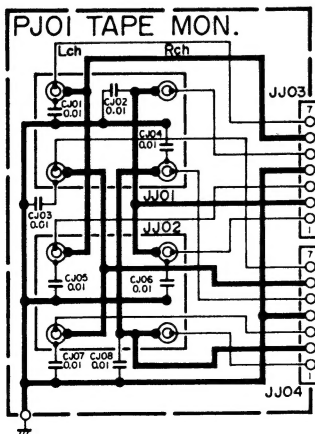
Tone Volume Assembly (PE01) Schematic
Diagram and Component Locations



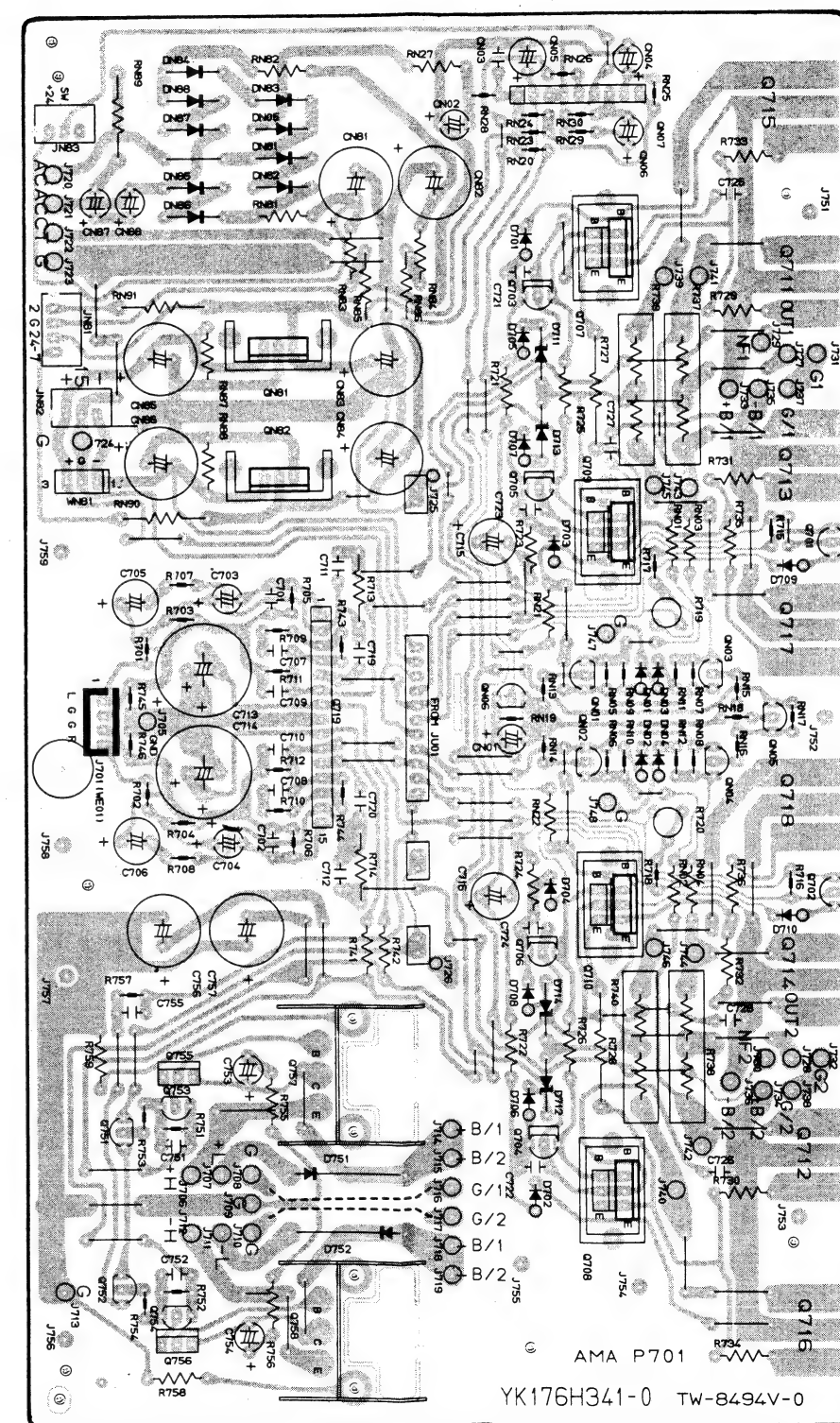
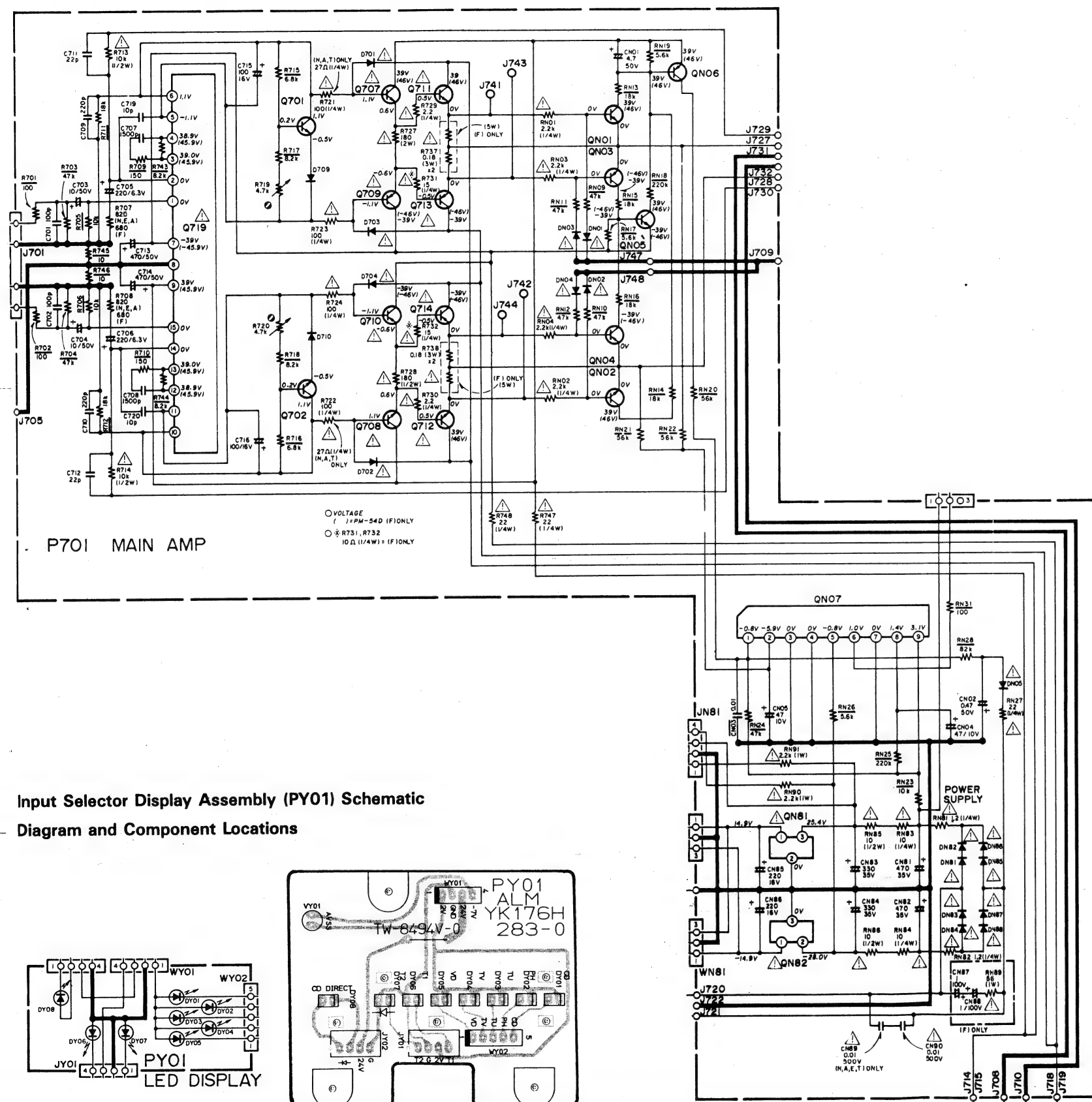
Power Supply Assembly (P861) Schematic
Diagram and Component Locations



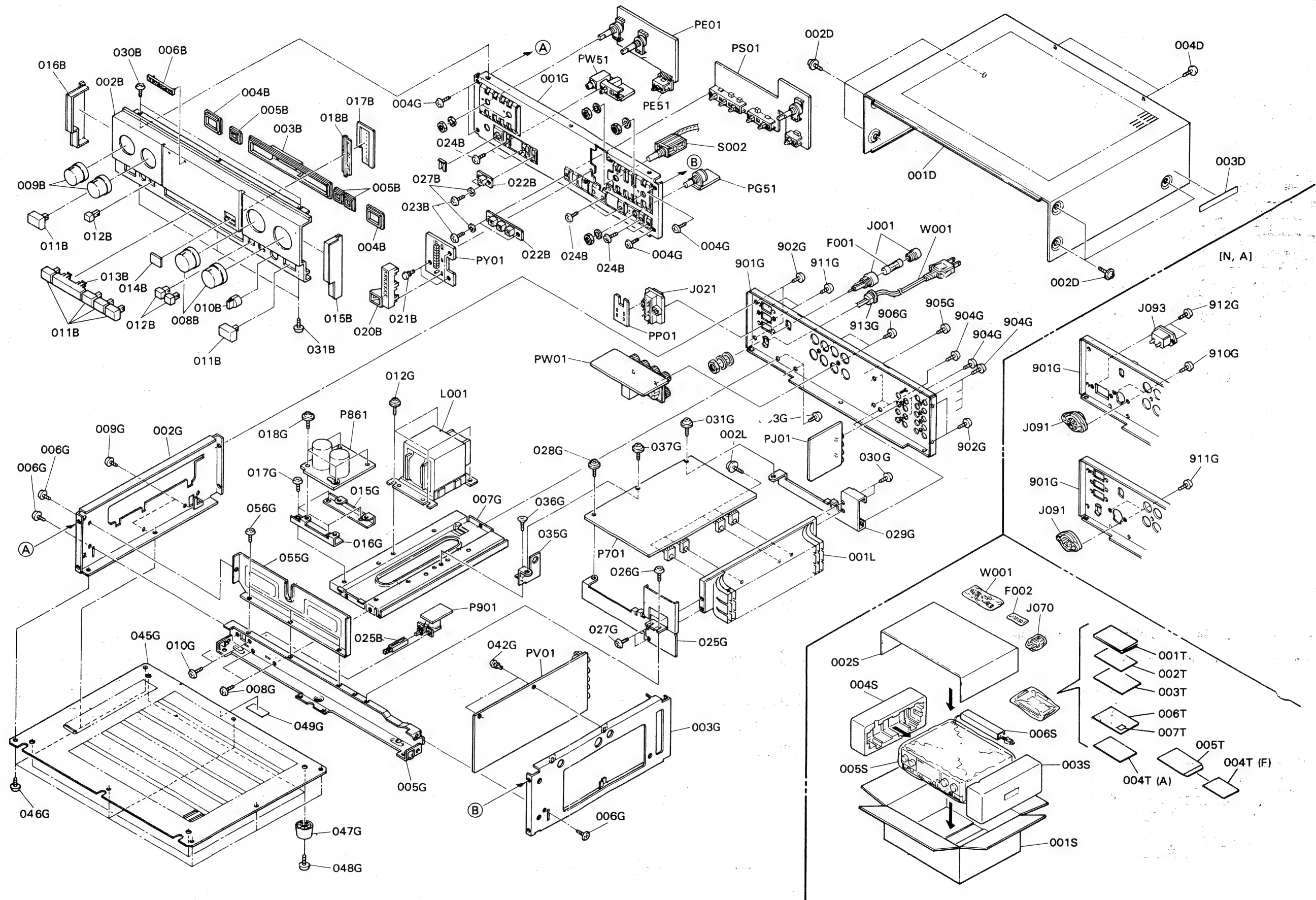
Tape Monitor Assembly (PJ01) Schematic Diagram and Component Locations



Main Amp Assembly (P701) Schematic Diagram and Component Locations



7. EXPLODED VIEW AND PARTS LIST



•[N]: for Europe
•[E]: for Europe
•[A]: for Australia
•[F]: for Japan

REF. DESIG.	PART NO.	DESCRIPTION	REF. DESIG.	PART NO.	DESCRIPTION
A	176H248400	Front Panel Assembly (PM-45)	046G	51280308M0	B.H.Tapped Screw B3×8
002B	176H248410	Front Panel Assembly (PM-54D)	047G	2759057010	Leg [N,E,A]
	176H248020	Front Panel (PM-45)		176H057010	Leg [F]
	176H248010	Front Panel (PM-54D)	048G	51280410M0	B.H.Tapped Screw B4×10
003B	176H259010	Bushing, Center	049G	2911861110	Label, Caution [N,E,A]
004B	242H259120	Bushing, Power/CD Direct			
005B	242H259130	Bushing, Speaker/Phono/Loudness	055G	176H109010	Shield
006B	274H251020	Badge, "MARANTZ"	056G	51280308M0	B.H.Tapped Screw B3×8
013B	263H113110	Stud			
014B	176H251010	Badge, "CD Direct"	901G	176H250020	Rear Panel [N,A]
015B	176H067010	Cap, Right		176H250030	Rear Panel [E]
016B	176H067020	Cap, Left		176H250010	Rear Panel [F]
017B	263H158010	Window, Selector Indicator	902G	51280308M0	B.H.Tapped Screw B3×8
018B	176H151010	Introducer	903G	51280308M0	B.H.Tapped Screw B3×8
			904G	51280308M0	B.H.Tapped Screw B3×8
008B	176H154010	Knob, Volume/Selector	905G	51280308M0	B.H.Tapped Screw B3×8
009B	176H154020	Knob, Tone Control	906G	51280308M0	B.H.Tapped Screw B3×8
010B	263H154130	Knob, Balance			
011B	242H270110	Button, Tone Defect/Tape Monitor/Tape Copy	910G	51280308M0	B.H.Tapped Screw B3×8
012B	242H270120	Button, Speaker/Phono/Loudness	911G	51280308M0	B.H.Tapped Screw B3×8
020B	176H271010	Holder, L.E.D.	912G	51280308M0	B.H.Tapped Screw B3×8
021B	2276005050	Clamper			
022B	176H051010	Guide Button	913G	1455259090	Bushing, AC cord [E,F]
023B	51100306M0	B.H.M. Screw B3×6			
024B	51100306M0	B.H.M. Screw B3×6	001L	176H267010	Heat Sink [N,E,A]
025B	176H125010	Joint, Power Switch		176H267130	Heat Sink [F]
027B	176H055010	Collar	002L	51260312M0	B.T.Screw B3×12
030B	51280308M0	B.H.Tapped Screw B3×8	△ F001	FS10125850	Fuse, 1.25A 250V [N,A]
031B	51280308M0	B.H.Tapped Screw B3×8		FS10160850	Fuse, 1.6A 250V [E]
001D	176H257010	Lid, Top Cover [N,E,A]	△ J001	YJ08000290	Jack, Fuse Holder [N,E,A]
	176H257020	Lid, Top Cover [F]	△ J021	YJ04000730	Jack, AC Outlet [E,F]
002D	51706009U0	Spec. Set Screw	△ J053	YT01010150	Terminal, Ground
003D	2911861140	Label, Caution [N,E,A]	△ J091	BY05030040	Voltage Selector [N,A]
004D	51280308U0	B.H.Tapped Screw B3×8		BY05080040	Voltage Selector [E]
			△ J093	YP04000610	Plug, AC Inlet [N,A]
001G	176H105010	Chassis, Front	△ L001	TS17634010	Power Transformer [N,A]
002G	176H105020	Chassis, Left		TS17634020	Power Transformer [E]
003G	176H105030	Chassis, Right		TS18507030	Power Transformer [F]
004G	51280308M0	B.H.Tapped Screw B3×8			
005G	176H126010	Stay, Center	S002	SR00050210	Rotary Switch
006G	51280308M0	B.H.Tapped Screw B3×8	△ W001	YC01800370	AC Power Cord [E,F]
007G	176H160010	Bracket			
008G	51280308M0	B.H.Tapped Screw B3×8			
009G	51280308M0	B.H.Tapped Screw B3×8			
010G	51100306M0	B.H.M. Screw B3×6			
012G	51706009Z0	Spec. Set Screw			
015G	176H104040	Retainer	001S	176H801010	Packing Case [N,A]
016G	176H104050	Retainer		176H801020	Packing Case [E]
017G	51280308M0	B.H.Tapped Screw B3×8		176H801030	Packing Case [F]
018G	51260308M0	B.T.Screw B3×8	002S	176H807010	Reinforcing [E]
			003S	263H809010	Cushion (R)
025G	176H104080	Retainer	004S	263H809020	Cushion (L)
026G	51280308M0	B.H.Tapped Screw B3×8	005S	9091111030	Polyethy Sheet
027G	51280308M0	B.H.Tapped Screw B3×8	006S	2864804010	Sleeve [E]
028G	51260308M0	B.T.Screw B3×8			
029G	176H104090	Retainer	001T	176H851310	User Manual [N,E,A]
				176H851110	User Manual [F]
030G	51280308M0	B.H.Tapped Screw B3×8	002T	176H851320	User Manual [N,E,A]
031G	51260308M0	B.T.Screw B3×8	003T	176H856010	Circuit Diagram [N,E]
035G	176H104070	Retainer	004T	9631000090	Warranty Card [A]
036G	51500308M0	F.H.Tapped Screw F3×8		9631000130	Warranty Card [F]
037G	51260308M0	B.T.Screw B3×8	005T	128T854010	Warranty Card [F]
			006T	9611000050	User's Card [F]
042G	2276005050	Clamper	007T	9540000010	License [F]
045G	268H257020	Lid, Bottom Cover	△ F002	FS10315850	Fuse, 3.15A 250V [E]
			△ J070	YJ04001240	Jack, AC Adapter [E]
			△ W001	ZC01805030	AC Power Cord [N]
				ZC02006030	AC Power Cord [A]

ASSIGNMENT OF COMMON PARTS CODES

RESISTOR

R*** (1) GD05□□□140, Carbon film fixed resistor, ±5%, 1/4W
R*** (2) GD05□□□160, Carbon film fixed resistor, ±5%, 1/6W

① — Resistance value

Examples

① Resistance value

0.1Ω ... 001 100Ω ... 100 1kΩ ... 102 100kΩ ... 104
 0.5Ω ... 005 18Ω ... 180 2.7kΩ ... 272 680kΩ ... 684
 1Ω ... 010 100Ω ... 101 10kΩ ... 103 1MΩ ... 105
 6.8Ω ... 068 390Ω ... 391 22kΩ ... 223 2.2MΩ ... 225

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C* : CERAMIC CAP.**

(1) DD1□□□□370, Ceramic condenser

① ②
 Disc type
 Temp. coeff. P350 ~ N1000, 50V
 Capacity value
 Tolerance

Examples

① Tolerance (Capacity deviation)

±0.25pF ... 0
 ±0.5pF ... 1
 ±5% ... 5

* Tolerance of COMMON PARTS handled here are as follows:

0.5pF ~ 5pF ... ±0.25pF
 6pF ~ 10pF ... ±0.5pF
 12pF ~ 560pF ... ±5%

② Capacity value

0.5pF ... 005 3pF ... 030 100pF ... 101
 1pF ... 010 10pF ... 100 220pF ... 221
 1.5pF ... 015 47pF ... 470 560pF ... 561

C* : CERAMIC CAP.**

(1) DK16□□□□300, High dielectric constant ceramic condenser

①
 Disc type
 Temp. chara. 2B4, 50V
 Capacity value

Examples

① Capacity value

100pF ... 101 1000pF ... 102 10000pF ... 103
 470pF ... 471 2200pF ... 222

C* : ELECTROLY CAP. (⚡), FILM CAP. (⚡)**

(1) EA□□□□□10, Electrolytic condenser

① ②
 One-way lead type, Tolerance ±20%
 Dielectric strength
 Capacity value

Examples

① Capacity value

0.1μF ... 104 4.7μF ... 475 100μF ... 107
 0.33μF ... 334 10μF ... 106 330μF ... 337
 1μF ... 105 22μF ... 226 1000μF ... 108
 2200μF ... 228

② Working voltage

6.3V ... 006 25V ... 025
 10V ... 010 35V ... 035
 16V ... 016 50V ... 050

(2) DF15□□□□350, Plastic film condenser

①
 One-way type, Mylar ±5% 50V
 Capacity value

Examples

① Capacity value

0.001μF (1000pF) ... 102 0.015μF ... 153
 0.0018μF ... 182 0.1μF ... 104
 0.01μF ... 103 0.56μF ... 564
 1μF ... 105

8. ELECTRICAL PARTS LIST

•[N]: for Europe
 •[E]: for Europe
 •[A]: for Australia
 •[F]: for Japan

REF. DESIG.	PART NO.	DESCRIPTION
P701	YK176H3410 ZZ176H8410	P701-MAIN AMP CIRCUIT BOARD P.W.Board, Main Amp P.W.Board Assembly
CN01	OA47505010	P701-CAPACITORS Elect 4.7μF 50V
CN02	OA47405010	Elect 0.47μF 50V
CN04	OA47601010	Elect 47μF 10V
CN05	OA47601010	Elect 47μF 10V
CN81	OA47703510	Elect 470μF 35V
CN82	OA47703510	Elect 470μF 35V
CN83	OA33703510	Elect 330μF 35V
CN84	OA33703510	Elect 330μF 35V
CN85	OA22701610	Elect 220μF 16V
CN86	OA22701610	Elect 220μF 16V
CN87	OA10510010	Elect 1μF 100V [F]
△ CN88	OA10510010	Elect 1μF 100V [F]
△ CN89	DK18103560	Ceramic 0.01μF +80%, -20% [N,E,A]
C701	DF55101510	Film 100pF ±5%
C702	DF55101510	Film 100pF ±5%
C703	OA10605010	Elect 10μF 50V
C704	OA10605010	Elect 10μF 50V
C705	OA22700610	Elect 220μF 6.3V
C706	OA22700610	Elect 220μF 6.3V
C707	OF15152010	Film 1500pF ±5%
C708	OF15152010	Film 1500pF ±5%
C709	DF55221090	Film 220pF ±5%
C710	DF55221090	Film 220pF ±5%
C711	DF35220520	Mica 22pF ±5%
C712	DF35220520	Mica 22pF ±5%
C713	OA47705010	Elect 470μF 50V [N,E,A]
	OA47706310	Elect 470μF 63V [F]
C714	OA47705010	Elect 470μF 50V [N,E,A]
	OA47706310	Elect 470μF 63V [F]
C715	OA10701610	Elect 100μF 16V
C716	OA10701610	Elect 100μF 16V
C719	DF31100520	Mica 10pF ±0.5%
C720	DF31100520	Mica 10pF ±0.5%
△ RN01	GG05222140	2.2KΩ ±5% 1/4W
△ RN02	GG05222140	2.2KΩ ±5% 1/4W
△ RN03	GG05222140	2.2kΩ ±5% 1/4W
△ RN04	GG05222140	2.2KΩ ±5% 1/4W
RN27	GG05220140	22Ω ±5% 1/4W
△ RN81	NH05012140	1.2Ω ±5% 1/4W, fusible
△ RN82	NH05012140	1.2Ω ±5% 1/4W, fusible
△ RN83	NF02100140	10Ω ±2% 1/4W, fusible
△ RN84	NF02100140	10Ω ±2% 1/4W, fusible
△ RN85	GG05100120	10Ω ±5% 1/2W
△ RN86	GG05100120	10Ω ±5% 1/2W
△ RN89	GA05560010	56Ω ±5% 1W [F]
△ RN90	GA05222010	2.2KΩ ±5% 1W
△ RN91	GA05222010	2.2KΩ ±5% 1W
		P701-RESISTORS

•[N]: for Europe
•[E]: for Europe
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•[F]: for Japan

REF. DESIG.	PART NO.	DESCRIPTION	REF. DESIG.	PART NO.	DESCRIPTION
△ R713	GG05103120	10KΩ ± 5% 1/2W	△ Q710	HT113582A0	Transistor 2SA1358A [N,E,A]
△ R714	GG05103120	10KΩ ± 5% 1/2W		HT113062D0	Transistor 2SA1306A [F]
R719	RA04720750	4.7KΩ, Trimming	△ Q711	HT331812A0	Transistor 2SC3181 [N,E,A]
R720	RA04720750	4.7KΩ, Trimming		HT332802A0	Transistor 2SC3280 [F]
△ R721	GG05101140	100Ω ± 5% 1/4W	△ Q712	HT331812A0	Transistor 2SC3181 [N,E,A]
△ R722	GG05101140	100Ω ± 5% 1/4W		HT332802A0	Transistor 2SC3280 [F]
△ R723	GG05101140	100Ω ± 5% 1/4W	△ Q713	HT112642A0	Transistor 2SA1264 [N,E,A]
△ R724	GG05101140	100Ω ± 5% 1/4W		HT113012A0	Transistor 2SA1301 [F]
△ R727	GA05181020	180Ω ± 5% 2W	△ Q714	HT112642A0	Transistor 2SA1264 [N,E,A]
△ R728	GA05181020	180Ω ± 5% 2W		HT113012A0	Transistor 2SA1301 [F]
△ R729	GG05022140	2.2Ω ± 5% 1/4W	△ Q719	HC10203030	IC STK-304MARK3 [N,E,A]
				HC10204030	IC STK-3062MARK3 [F]
△ R730	GG05022140	2.2Ω ± 5% 1/4W			P701-MISCELLANEOUS
△ R731	GG05150140	15Ω ± 5% 1/4W [N,E,A]	JN81	YJ06002440	Jack, 4P
	GG05100140	10Ω ± 5% 1/4W [F]	JN82	YJ06002430	Jack, 3P
△ R732	GG05150140	15Ω ± 5% 1/4W [N,E,A]	JN83	YJ06002430	Jack, 3P
	GG05100140	10Ω ± 5% 1/4W [F]	J701	YP06003440	Plug, 4P
△ R737	BW10000110	0.18Ω 3W [N,E,A]	WN81	YU03520260	Jumper Lead, 3P
	BW10000080	Resistor Compo. 0.18Ω 3W [N,E,A]			
△ R738	BW10000110	Resistor Compo. 0.18Ω 3W [N,E,A]	001K	264H267030	Heatsink
	BW10000080	Resistor Compo. 0.18Ω 3W [N,E,A]	002K	264H267030	Heatsink
△ R747	GG05220140	22Ω ± 5% 1/4W	003K	51100308M0	B.H.M. Screw B3×8
△ R748	GG05220140	22Ω ± 5% 1/4W	004K	51100308M0	B.H.M. Screw B3×8
		P701-SEMICONDUCTORS			P861-POWER SUPPLY CIRCUIT BOARD
△ DN01	HD20014010	Diode 1SS81	P861	YK176H2850	P.W.Board, Power Supply
△ DN04	HD20022030	Diode DSF10C		ZZ176H8850	P.W.Board Assembly
△ DN81	HD20022030	Diode DSF10C			P861-CAPACITORS
△ DN88			C861	EB82804510	Elect 8200μF 45V [N,E,A]
△ D701	HD20014010	Diode 1SS81		EB82805610	Elect 8200μF 56V [F]
△ D704	HD20002000	Diode 1SS133 etc.	C862	EB82804510	Elect 8200μF 45V [N,E,A]
D709	HD20002000	Diode 1SS133 etc.		EB82805610	Elect 8200μF 56V [F]
D710			C863	OA10510010	Elect 1μF 100V [F]
QN01	HT322401A0	Transistor 2SC2240 (GR)	C864	OA10510010	Elect 1μF 100V [F]
QN02	HT322401A0	Transistor 2SC2240 (GR)	C865	DK18103560	Ceramic 0.01μF 500V [N,E,A]
QN03	HT109701A0	Transistor 2SA970 (GR)			P861-RESISTOR
QN04	HT109701A0	Transistor 2SA970 (GR)	△ R863	GA05560010	56Ω ± 5% 1W [F]
QN05	HT322401A0	Transistor 2SC2240 (GR)			P861-SEMICONDUCTORS
QN06	HT109701A0	Transistor 2SA970 (GR)	△ D861	HD20030100	Diode 30D-2
QN07	HC10042050	IC TA7317P	△ D862	HD20030100	Diode 30D-2
△ QN81	HC38515090	IC NJM78M15A	△ D863	HD20030100	Diode 30D-2
△ QN82	HC39515090	IC NJM79M15A	△ D864	HD20030100	Diode 30D-2
Q701	HT318151C0	Transistor 2SC1815 (GRN)			P901-POWER SWITCH CIRCUIT BOARD
Q702	HT318151C0	Transistor 2SC1815 (GRN)	P901	YK176H2860	P.W.Board, Power Switch
△ Q707	HT334212A0	Transistor 2SC3421A [N,E,A]		ZZ176H8860	P.W.Board Assembly
	HT332982D0	Transistor 2SC3298A [F]	△ C901	DK18103840	Ceramic 0.01μF 250V [N,E,A]
△ Q708	HT334212A0	Transistor 2SC3421A [N,E,A]		DK18103850	Ceramic 0.01μF 250V [F]
	HT332982D0	Transistor 2SC3298A [F]	S901	SP01011100	Push Switch, Power
△ Q709	HT113582A0	Transistor 2SA1358A [N,E,A]			PE01-TONE VOLUME CIRCUIT BOARD
	HT113062D0	Transistor 2SA1306A [F]	PE01	YK176H2820	P.W.Board, Tone Volume
				ZZ176H8820	P.W.Board Assembly
					PE01-CAPACITORS
			CE03	DF55271510	Film 270pF ± 5%
			CE04	DF55271510	Film 270pF ± 5%
			CE05	DF35560520	Mica 56pF ± 5%
			CE06	DF35560520	Mica 56pF ± 5%
			CE07	OA22700610	Elect 220μF 6.3V
			CE08	OA22700610	Elect 220μF 6.3V
			CE09	DF35390520	Mica 39pF

•[N]: for Europe
•[E]: for Europe
•[A]: for Australia
•[F]: for Japan

REF. DESIG.	PART NO.	DESCRIPTION
CE10	DF35390520	Mica 39pF
CE11	OF15153010	Film 0.015 μ F \pm 5%
CE12	OF15153010	Film 0.015 μ F \pm 5%
CE13	OA10405010	Elect 0.1 μ F 50V
CE14	OA10405010	Elect 0.1 μ F 50V
CE15	OF15473010	Film 0.047 μ F \pm 5%
CE16	OF15473010	Film 0.047 μ F \pm 5%
CE17	OA47405010	Elect 0.47 μ F 50V
CE18	OA47405010	Elect 0.47 μ F 50V
CE19	OA22601610	Elect 22 μ F 16V
CE20	OA22601610	Elect 22 μ F 16V
CE21	OA47505010	Elect 4.7 μ F 50V
CE22	OA47505010	Elect 4.7 μ F 50V
CE23	OF15332010	Film 0.0033 μ F \pm 5%
CE24	OF15332010	Film 0.0033 μ F \pm 5%
CE25	OA22701610	Elect 220 μ F 16V
CE26	OA22701610	Elect 220 μ F 16V
PE01-RESISTORS		
RE37	RM01030310	10K Ω Variable
RE38	RM01030310	10K Ω Variable
△ RE39	NF02470140	47 Ω 1/4W, Fusible
△ RE40	NF02470149	47 Ω 1/4W, Fusible
PE01-SEMICONDUCTORS		
DE01	HD60001160	C.R.Diode E-452
DE02	HD60001160	C.R.Diode E-452
QE01	HF203691B0	F.E.T. 2SK369 (BL)
QE02	HF203691B0	F.E.T. 2SK369 (BL)
QE03	HF203691B0	F.E.T. 2SK369 (BL)
QE04	HF203691B0	F.E.T. 2SK369 (BL)
QE05	HC10026090	IC NJM2041DD
PE01-MISCELLANEOUS		
JE01	YP06003440	Plug, 4P
WE01	YB00280360	Connective Cord, 4P
WE02	YU03360260	Jumper Lead, 3P
PE51-TONE DEFEAT SWITCH CIRCUIT BOARD		
PE51	YK176H2880 ZZ176H8880	P.W.Board, Tone Defeat Switch P.W.Board Assembly
SE51	SP02011420	Push Switch; Tone Defeat
PG51-BALANCE VOLUME CIRCUIT BOARD		
PG51	YK176H2840 ZZ176H8840	P.W.Board, Balance Volume P.W.Board Assembly
RG51	RM01040890	100K Ω , Variable
PJ01-TAPE MONITOR CIRCUIT BOARD		
PJ01	YK176H1420 ZZ176H1420	P.W.Board, Tape Monitor P.W.Board Assembly
PJ01-CAPACITORS		
CJ01	DK18103310	Ceramic 0.01 μ F +80%, -20%
CJ02	DK18103310	Ceramic 0.01 μ F +80%, -20%
CJ03	DK18103310	Ceramic 0.01 μ F +80%, -20%
CJ04	DK18103310	Ceramic 0.01 μ F +80%, -20%
CJ05	DK18103310	Ceramic 0.01 μ F +80%, -20%
CJ06	DK18103310	Ceramic 0.01 μ F +80%, -20%
CJ07	DK18103310	Ceramic 0.01 μ F +80%, -20%
CJ08	DK18103310	Ceramic 0.01 μ F +80%, -20%

REF. DESIG.	PART NO.	DESCRIPTION
JJ01	YT02040690	PJ01-MISCELLANEOUS
JJ02	YT02040690	Terminal, 4P
JJ03	YJ06002460	Terminal, 4P
JJ04	YJ06002460	Jack, 7P
		Jack, 7P
PP01-FUSE / AC OUTLET CIRCUIT BOARD (PM-54D ONLY)		
PP01	YK176H2870	P.W.Board, Fuse/AC Outlet
△ FP01	FS10400600	Fuse, 4A 250V
JP01	YJ08003900	Jack, Fuse Clip
JP02	YJ08003900	Jack, Fuse Clip
JP03	YP06003400	Plug, 2P
PS01-VOLUME/PUSH SWITCH CIRCUIT BOARD		
PS01	YK176H2810 ZZ176H8810	P.W.Board, Volume/Push Switch P.W.Board Assembly
PS01-CAPACITORS		
CS01	OF15102010	Film 0.001 μ F \pm 5%
CS02	OF15102010	Film 0.001 μ F \pm 5%
PS01-RESISTORS		
△ RS07	GA05122010	1.2K Ω 1W
RS10	RM05031250	50K Ω , Variable
PS01-MISCELLANEOUS		
SS01	SP04030360	Push Switch; Tape Monitor 1/2
SS02	SP04020500	Push Switch; Phono MC/MM
SS03	SP04010520	Push Switch; CD Direct
WS01	YU06140260	Jumper Lead, 6P
WS02	YU07380260	Jumper Lead, 7P
WS03	YU07360260	Jumper Lead, 7P
WS04	YU04180260	Jumper Lead, 4P
WS05	YU04080260	Jumper Lead, 4P
WS06	YU06120260	Jumper Lead, 6P
WS07	YU04120260	Jumper Lead, 4P
WS09	YB00370060	Connective Cord, 3P
WS10	YB00370070	Connective Cord, 3P
WS11	YB00320260	Connective Cord, 4P
PV01-PHONO, INPUT SELECTOR CIRCUIT BOARD		
PV01	YK176H1410 ZZ176H1410	P.W.Board, Phono, Input Selector P.W.Board Assembly
PV01-CAPACITORS		
CV01 { CV08	DK18103310	Ceramic 0.01 μ F +80%, -20%
C401	DF55101510	Film 100pF \pm 5%
C402	DF55101510	Film 100pF \pm 5%
C403	DF55681510	Film 680pF \pm 5%
C404	DF55681510	Film 680pF \pm 5%
C405	OA10800610	Elect 1000 μ F 6.3V [N, E, A]
	OA22800610	Elect 2200 μ F 6.3V [F]
C406	OA10800610	Elect 1000 μ F 6.3V [N, E, A]
	OA22800610	Elect 2200 μ F 6.3V [F]
C407	OF15473010	Film 0.047 μ F \pm 5%
C408	OF15473010	Film 0.047 μ F \pm 5%
C409	OF15103010	Film 0.01 μ F \pm 5%
C410	OF15103010	Film 0.01 μ F \pm 5%
C411	OF15332010	Film 3300pF \pm 5%
C412	OF15332010	Film 3300pF \pm 5%

•[N]: for Europe
•[E]: for Europe
•[A]: for Australia
•[F]: for Japan

REF. DESIG.	PART NO.	DESCRIPTION
C413	OA10505010	Elect 1 μ F 50V [N,E,A]
	OA10601610	Elect 10 μ F 16V [F]
C414	OA10505010	Elect 1 μ F 50V [N,E,A]
	OA10601610	Elect 10 μ F 16V [F]
C415	OF15392010	Film 3900pF \pm 5%
C416	OF15392010	Film 3900pF \pm 5%
C417	OA47701610	Elect 470 μ F 16V
C418	OA47701610	Elect 470 μ F 16V
C419	DK18103310	Ceramic 0.01 μ F
C420	DK18103310	Ceramic 0.01 μ F
PV01-RESISTORS		
Δ R429	NF02470140	47 Ω 1/4W, Fusible
Δ R430	NF02470140	47 Ω 1/4W, Fusible
PV01-SEMICONDUCTORS		
DV01	HD20001000	Diode 1S1555 etc.
DV02	HD20001000	Diode 1S1555 etc. [N,E,A]
D401	HD60001160	C.R.Diode E-452
D402	HD60001160	C.R.Diode E-452
Q401	HF203691B0	F.E.T. 2SK369 (BL)
Q402	HF203691B0	F.E.T. 2SK369 (BL)
Q403	HF203691B0	F.E.T. 2SK369 (BL)
Q404	HF203691B0	F.E.T. 2SK369 (BL)
Q405	HC10026090	IC NJM2041DD
PV01-MISCELLANEOUS		
J401	YP06003330	Plug, 3P
J402	YP06003330	Plug, 3P
J403	YT02020610	Terminal, 2P
JV01	YT02020620	Terminal, 2P
JV02	YT02060280	Terminal, 6P
JV03	YJ06002390	Jack, 5P
JV04	YJ06002430	Jack, 3P
JV05	YJ06002440	Jack, 4P
JV06	YJ06002450	Jack, 6P
LVO1	LY20240230	Relay
LVO2	LY20240230	Relay [N,E,A]
SV01	SS04060020	Slide Switch
WV01	YU06140260	Jumper Lead, 6P
WV02	YU06140260	Jumper Lead, 6P
PW01-SPEAKER PROTECTOR RELAY CIRCUIT BOARD		
PW01	YK176H3420	P.W.Board, Speaker Protector Relay
	ZZ176H8420	P.W.Board Assembly
PW01-CAPACITORS		
CW01	OF15104010	Film 0.1 μ F \pm 5% [F]
CW02	OF15104010	Film 0.1 μ F \pm 5% [F]
PW01-RESISTORS		
Δ RW01	GG05022120	2.2 Ω \pm 5% 1/2W
Δ RW02	GG05022120	2.2 Ω \pm 5% 1/2W
Δ RW03	GA05100030	10 Ω \pm 5% 3W
Δ RW04	GA05100030	10 Ω \pm 5% 3W
Δ RW05	GA05331020	330 Ω \pm 5% 2W
Δ RW06	GA05331020	330 Ω \pm 5% 2W
PW01-SEMICONDUCTOR		
Δ DW01	HD20002000	Diode 1SS133, etc.
PW01-MISCELLANEOUS		
JW01	YT01040310	Terminal, 4P
JW02	YT01040320	Terminal, 4P
JW13	YJ07001090	Jack, 4P

REF. DESIG.	PART NO.	DESCRIPTION
LW01	LL23905120	Choke Coil; Speaker
LW02	LL23905120	Choke Coil; Speaker
Δ LW03	LY20240260	Relay, Speaker Protector
PW51-SPEAKER SWITCH/HEADPHONE CIRCUIT BOARD		
PW51	YK176H3440	P.W.Board, Speaker Switch/Headphone
	ZZ176H8440	P.W.Board Assembly
RW51	GA05122010	1.2K Ω \pm 5% 1W
JW51	YJ01002520	Jack; Headphone
SW51	SP02011410	Push Switch, Speaker
WW51	YU02320260	Jumper Lead, 2P
WW52	YU04360260	Jumper Lead, 4P
PY01-INPUT SELECTOR DISPLAY CIRCUIT BOARD		
PY01	YK176H2830	P.W.Board, Input Selector Display
	ZZ176H8830	P.W.Board Assembly
PY01-SEMICONDUCTORS		
DY01	HI10028320	L.E.D. GL9HD4; CD
DY02	HI10028320	L.E.D. GL9HD4; Phono
DY03	HI10028320	L.E.D. GL9HD4; Tuner
DY04	HI10028320	L.E.D. GL9HD4; Television
DY05	HI10028320	L.E.D. GL9HD4; Video
DY06	HI10028320	L.E.D. GL9HD4; Tape-1
DY07	HI10028320	L.E.D. GL9HD4; Tape-2
DY08	HI10038030	L.E.D. SLP281F-50U; CD Direct
PY01-MISCELLANEOUS		
JY01	YJ07001090	Jack, 4P
JY02	YJ06002440	Jack, 4P
WY01	YU04400260	Jumper Lead, 4P

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

NOTE ON SAFETY:

Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

9. TECHNICAL SPECIFICATIONS (DIN)

AUDIO SECTION

IHF Dynamic Power

4 ohms	88W
8 ohms	59W

Power Output per Channel

DIN 4 ohms	60W
RMS 4 ohms (20 Hz — 20 kHz)	48W
DIN 8 ohms AT 1 kHz	50W
RMS 8 ohms (20 Hz — 20 kHz)	40W
Total Harmonic Distortion at RMS 8 ohms	0.02%
I.M. Distortion	0.02%
Damping Factor 8 ohms (1 kHz)	100

MM CARTRIDGE INPUT

Frequency Response (IEC RIAA)	±0.5%
Signal-to-Noise Ratio (A weighted)	86 dB
Input Impedance	47 k ohms
Input Capacitance	200 pF
Input Sensitivity	2.5 mV
Equivalent Input Noise (A weighted)	0.25 μ V
Dynamic Range	113 dB

MC CARTRIDGE INPUT

Input Sensitivity	250 μ V
Input Impedance	100 ohms

CD-TUNER-TAPE INPUT

Input Impedance	20 k ohms
Input Sensitivity	150 mV
Frequency Response (\pm 1.0 dB)	15 Hz ~ 70 kHz
Signal to Noise Ratio (IEC A weighted)	98 dB

OUTPUT VOLTAGE

Tape Out [PHONO (MM) 7.75 mV]	465 mV
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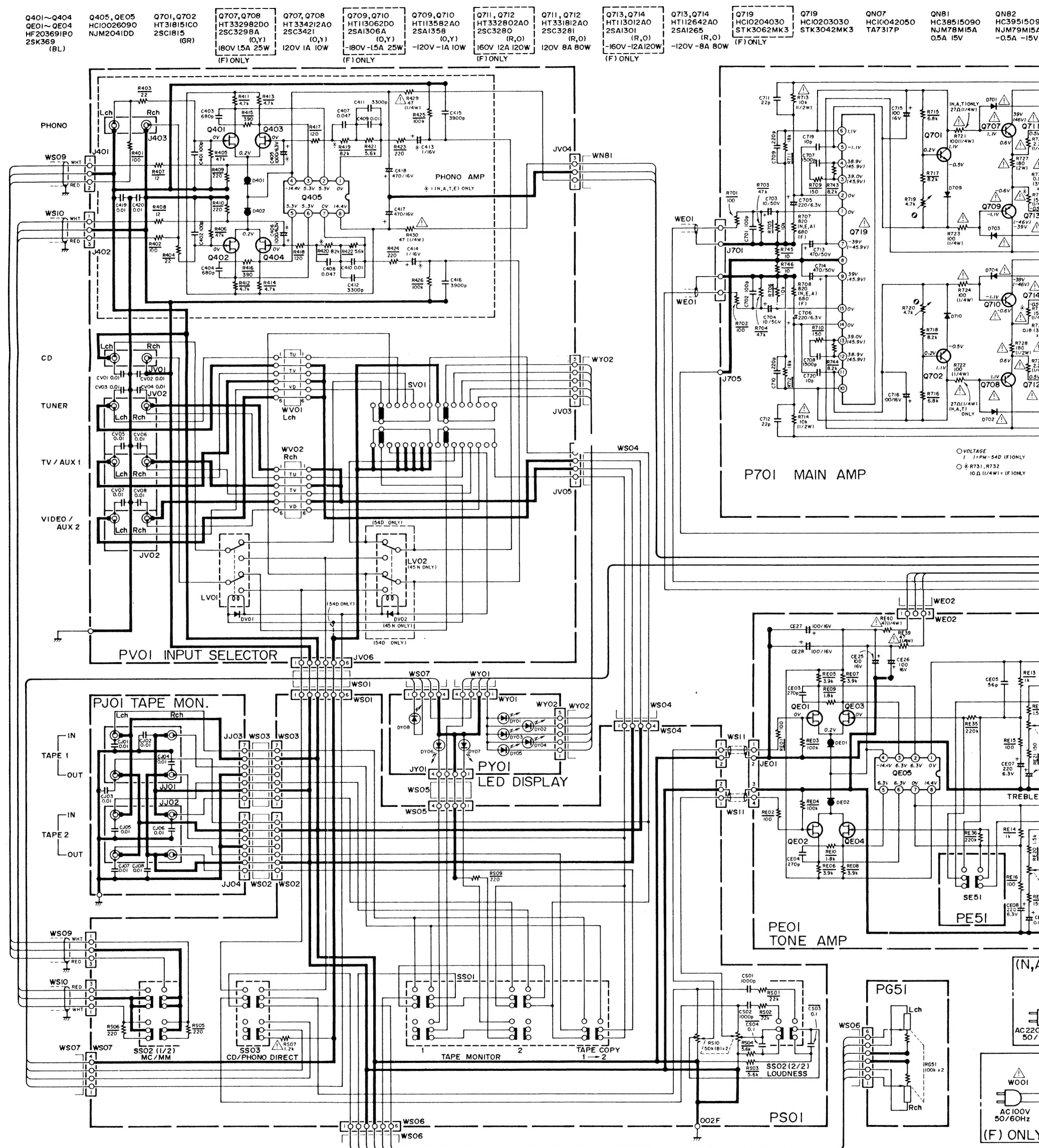
OUTPUT IMPEDANCE

Tape Out	220 ohms
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GENERAL

Power Requirements (N Version)	220/240 V AC, 50/60 Hz
Power Requirements (E Version)	110/120/220/240 V AC, 50/60 Hz
Power Consumption at Rated Output, both Channels Operating	184W
Dimensions	
Panel Width	416 mm
Panel Height	118 mm
Depth	334 mm
Weight	
Unit Alone	8.6 kg

10. SCHEMATIC DIAGRAM



**"SERVICE INFORMATION IS FOR USE BY QUALIFIED PERSONNEL ONLY –
ANY MISADJUSTMENT OR MISALIGNMENT MAY BE TREATED AS A NON-WARRANTY
REPAIR BY ANY MARANTZ SERVICE CENTRE –"**

Kind of Common Parts

RESISTOR

R*** (1) GD05 - - - 140. Carbon film fixed resistor. $\pm 5\%$ 1/4W

R*** (2) GD05 - - - 160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

C*** : CERAMIC CAP.

(1) DD1 - - - 370, Ceramic condenser,
disc type (titan condenser)
Temp. coeff. P350 ~ N1000 50V

C* : CERAMIC CAP.**

(1) DK16 - - - 300, High dielectric constant ceramic condenser,
disc type (titan variable)
Temp. chara. 2B4 50V

$$\overline{C^{***}} : \text{ELECTROLY CAP. (}\nabla\text{)} / \text{FILM CAP. (}\equiv\text{)}$$

(1) EA - - - - - 10, Electrolytic condenser,
one-way lead type, tolerance $\pm 20\%$

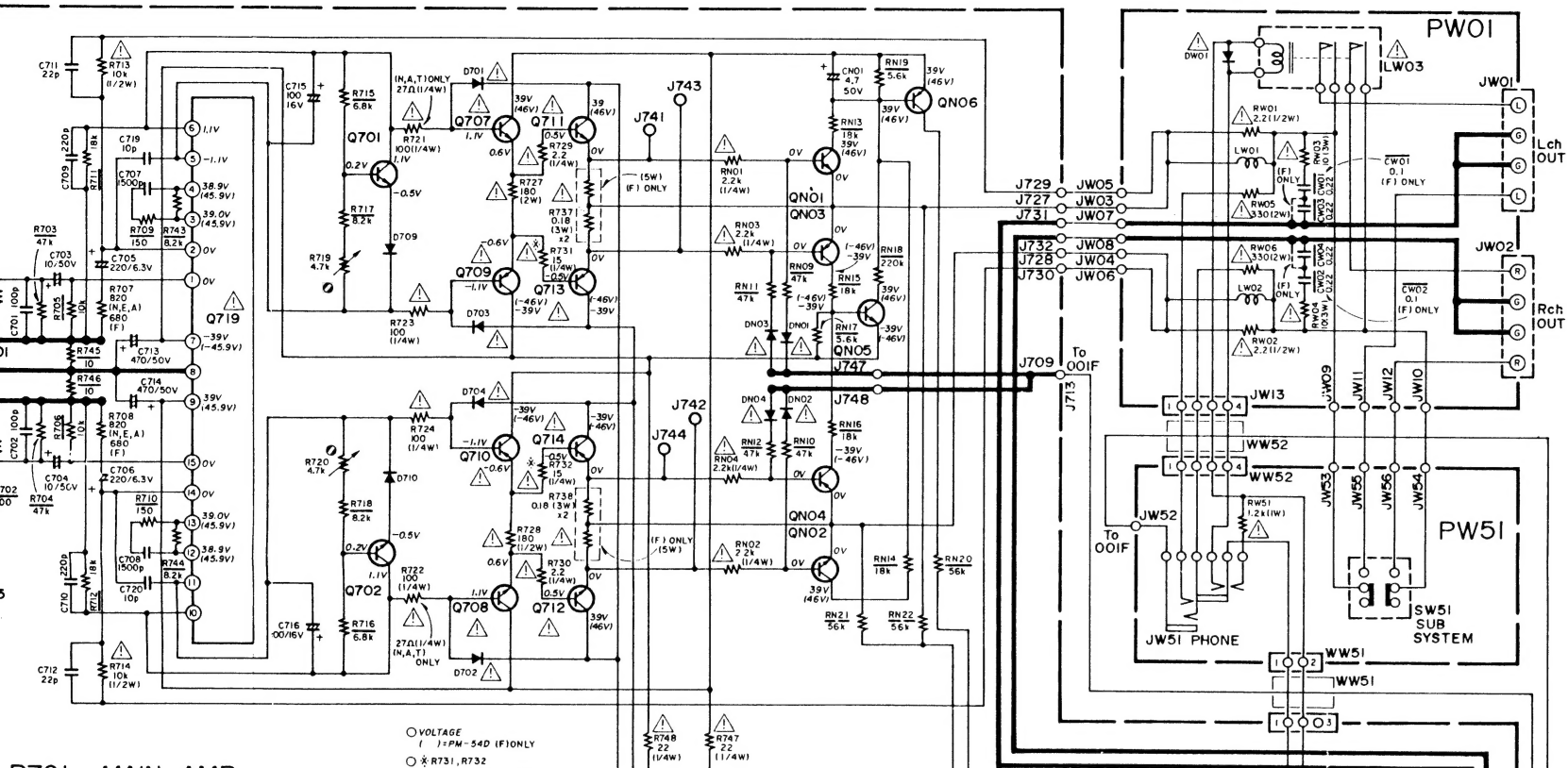
(2) DF15 - - 350, Plastic film condenser, one-way type, Mylar, $\pm 5\%$ 50V

* In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

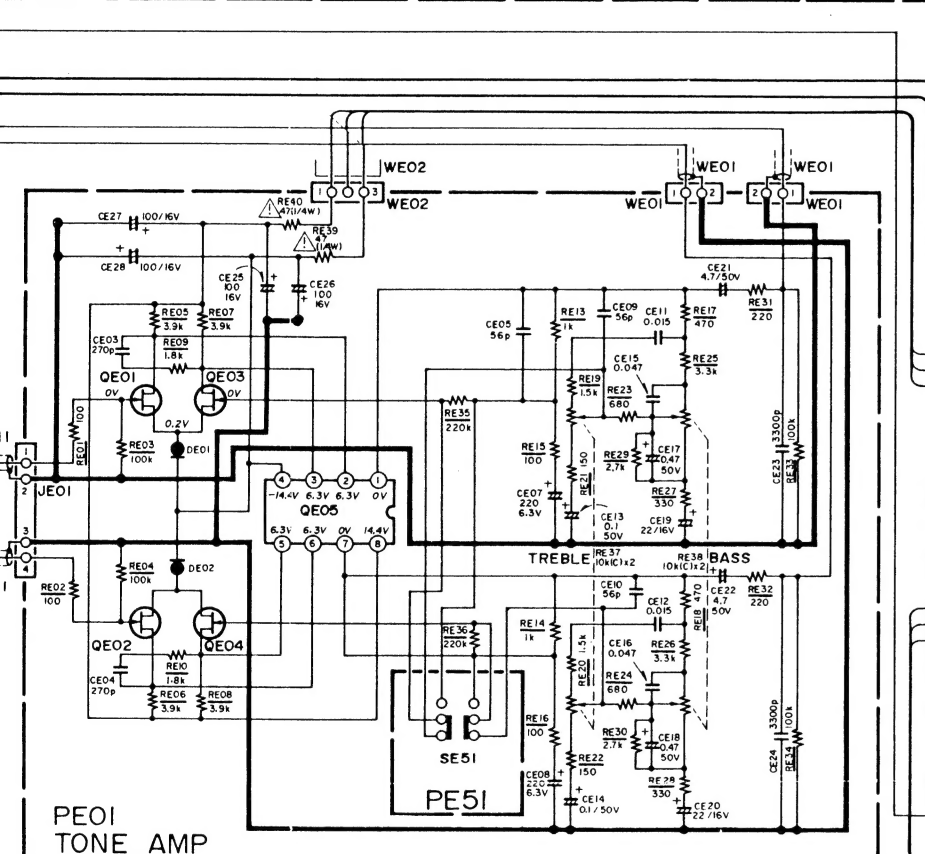
F001	FS1016085
L001	TS1763401
L001	TS1763402
S002	SR0005021
RE37	RM010303
RE38	RM010303
SE51	SP0201142
RG51	RM010408
RS10	RM050312

Model PM-45

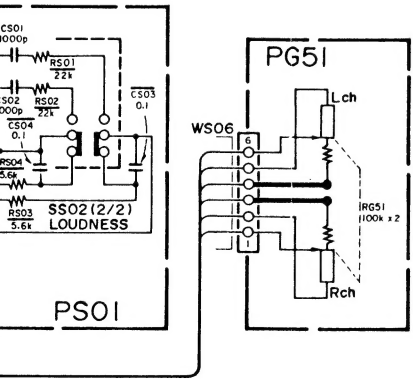
Q719 HC10204030 STK3062MK3 (F) ONLY	Q719 HC10203030 STK3042MK3	QNO7 HC10042050 TA7317P	QNB1 HC38515090 NJM78M15A 0.5A 15V	QNB2 HC39515090 NJM79M15A -0.5A -15V	D401, D402 DE01, DE02 HD60001160 E-452	D701~D704 DN01~DN04 HD20014010 ISS81	D705~D710 DU01~DU05 DW01 HD20002000 ISS133 etc...	D711~D714 HD30002020 MA1039M	D861~D864 HD20030100 30D-2	DN05 DN81~DN88 DW02 HD20022030 DSF10C IA 200V	DY01~DY07 H110028320 GL9HD4	DY08 H110038030 SLP281F -50U	QNO1 QNO2, QNO5 HT322401A0 2SC2240 (GR)	QNO3 QNO4, QNO6 HT109701A0 2SA970 (GR)	DY01, DY02 HD20001000 IS1555 etc...
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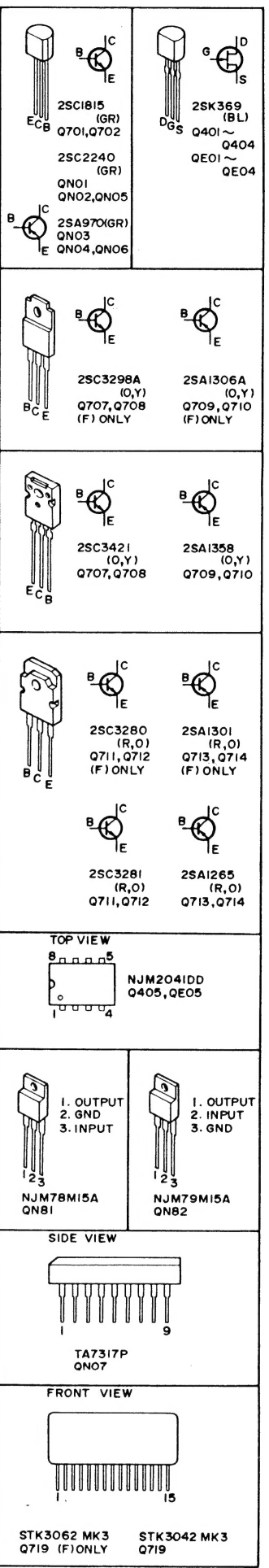
P701 MAIN AMP



PE01 TONE AMP



P861 POWER SUPPLY



NOTE ON SAFETY:
Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

1 CAP. (\pm) denser, e, tolerance $\pm 20\%$ denser, ylar, $\pm 5\%$ 50V e establish the correct dure "ASSIGNMENT OF	F001 FS10160850 L001 TS17634010 L001 TS17634020 S002 SR00050210 RE37 RM01030310 RE38 RM01030310 SE51 SP02011420 RG51 RM01040890 RS10 RM05031250	FUSE 1.6A POWER TRANSF. [N.A.] POWER TRANSF. [E] ROTARY SWITCH INPUT SELECTOR VARIABLE 10K Ω TREBLE VARIABLE 10K Ω BASS PUSH SWITCH TONE DEFEAT VARIABLE 100K Ω BALANCE VARIABLE 50K Ω MAIN	SP04030360 SP04020500 SP04010520 LY20240230 SS04060020 LY20240260 SP02011410 RA04720750 RA04720750 SP01011100	PUSH SWITCH TAPE MONITOR PUSH SWITCH PHONO MC/MM PUSH SWITCH CD DIRECT RELAY SLIDE SWITCH RELAY SPEAKER PROTECTOR PUSH SWITCH SPEAKER TRIMMING 4.7K Ω TRIMMING 4.7K Ω PUSH SWITCH POWER
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Components and wiring are subject to change for modification without notice.



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